

Oil Prices and Fiscal Regimes

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Oxford Institute for Energy Studies

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1. INTRODUCTION AND SUMMARY

Fiscal regimes in oil deal essentially with the upstream, that is exploration and production. They may, or may not, be defined in a single law. More often than not, the components of fiscal regimes in oil are actually found dispersed in different laws and rulings, and their beneficiaries may include municipalities, provincial administration and the central government. In order to be entitled to explore a plot of land and to exploit the reservoirs that might be discovered the oil company will enter in some kind of legal arrangements with the natural resource owner. These arrangements – a licence, concession, lease, service contract, profit or production-sharing agreement – normally also include besides royalties and taxes some specific payments and several other conditions. In this paper these conditions will be considered as part of fiscal regimes even when the natural resource is privately owned and, therefore, the oil companies have to acquire *private* leases. The reason is that from the lessee's standpoint it is the total payment, whether made to the government and/or the private owners, that matters.

Private ownership of reservoirs still survives in the United States where private land property generally extends to the subsoil. In the rest of the world and, of course, on public lands in the USA (including, most importantly, waters), reservoirs are publicly owned. Yet to bring the exceptional case of the USA into the picture is not only of practical importance as this country has been the cradle of the petroleum industry, but is also theoretically appropriate. Indeed, looking at the theoretical side of fiscal regimes in oil, it turns out that the relevant issues were originally developed and discussed under the assumption of private landed property.

This paper starts with a critical review of the classical debate on the private landlord-tenant relationship and its relevance to prices. It concludes that contrary to the established theory in modern economics since Ricardo, which asserts its irrelevance, this relationship is very important to the determination of prices. The private landlord-tenant relationship may lead to a mark-up on prices in the form of a 'reservation ground-rent'.

However, things may be different when minerals are publicly owned. In this case there are basically two possibilities. First, the state may design a licensing framework granting the investors free access to the natural resource. This would benefit consumers through lower

prices. Second, the state may act, on the contrary, like a private landlord. Mineral-exporting countries, especially third world countries, may be interested in royalties, which may represent a substantial contribution not only to fiscal revenues but also to foreign exchange earnings. As a matter of fact, these countries may be interested in an *international* ground-rent.

Accordingly, fiscal regimes in oil may be divided into two classes. The first may be labelled *liberal*, the second one *proprietary*. Both are discussed in detail in this paper. In liberal fiscal regimes the marginal fiscal take is zero. The state taxes only excess profits, carefully avoiding obstructing the free flow of investment. All the conditions attached to typical licences under these regimes point in the same direction. They may promote, for example, co-operation between different licensees according to the geology and at the same time promote competition in the market place. Thus liberal fiscal regimes aim at one objective: low prices. This objective is achieved through the efficient management of the natural resource and the unhampered development of productivity.

Proprietary fiscal regimes, on the other hand, are characterised by a positive marginal rent, a reservation ground-rent, which puts a threshold on the flow of investment. (Excess profits, of course, are also taxed away). The investor always seeks to make at least a reservation profit on top of which the landlord state demands at least a reservation ground-rent. The regulatory framework may also promote efficient investment and productivity, but ultimately the purpose is to collect higher ground-rents rather than lower prices. National oil companies (NOCs) may be very helpful in achieving this aim. As windows on the industry, they may enable the landlord states to enter into much more complex contractual relationships. In some instances, the private companies may be contracted as production services providers, producing oil no longer as tenants but on behalf of the NOCs. In such a situation it is the NOC which decides on volumes and prices.

In comparing liberal and proprietary fiscal regimes, two extreme cases appear at the ends of the spectrum. The first is a radical liberal regime, where there is no landlord, and the producing companies only have to face consumers. The second is a radical proprietary fiscal regime, where there is no tenant, and where landlords face consumers directly. From one extreme to the other spans the range of actual fiscal regimes in oil, with the producing companies mediating between consumers and landlords.

A historical note adds a time dimension to this analysis. In the first six decades or so of this century, the US fiscal regime developed into a worldwide reference. This regime is qualified as 'conciliatory', because it developed against the background of private mineral

property. Hence, public lands in the United States were not licensed but leased following the pattern of private leases. Not surprisingly, then, the US system became a first reference to third world oil-exporting countries. With the foundation of OPEC in 1960, however, the 'uncompromising landlord states' eventually adopted a radical proprietorial fiscal regime culminating in the nationalisations of the 1970s. Within the OPEC area the international oil companies disappeared as tenants and became production services providers and arms' length buyers of crude oil. Yet the extreme radicalism of OPEC elicited a similarly radical liberal response in the consuming countries. Through an efficient management of the natural resource within their area and with the help of a liberal fiscal regime, they succeeded in maximising non-OPEC production. The best and most successful example of the liberal response to OPEC is to be found in the United Kingdom Continental Shelf.

Over the last ten years or so, the liberal approach has not been confined to non-OPEC oil-exporting countries; some OPEC countries have adopted it. One major event favouring this trend was the collapse of the Soviet Union, an oil exporter, to which consuming countries were quick to respond with the Energy Charter Treaty of 1994. This treaty commits member countries to advance towards a liberal framework in oil, from licensing to taxation. It represents exactly the opposite of the 'permanent sovereignty over natural resources' once so cherished by third world mineral exporting countries and most effectively by OPEC.

If this trend continues we would expect a long-term tendency of declining oil prices. Indeed, given the importance of fiscal regimes to the determination of oil prices, this conclusion will still hold even if one accepts Campbell's thesis on the growing scarcity of oil reserves. Growing scarcity entails higher costs which will raise the first floor to prices. But there is a second floor, arising from fiscal regimes. Given their importance to present price levels, the loss of the fiscal prop to prices will be more significant than the rise in the cost floor. This is simply because fiscal regimes are responsible for higher price levels than rising costs will achieve.

2. THEORETICAL BACKGROUND

2.1 Ricardian Rent Theory

What is the purpose of fiscal regimes in oil? Is it to secure the natural resource owners a proper ground-rent,¹ and if so, how should the 'proper' level be defined? Or is it to secure the investors a proper profit? Before answering these questions regarding oil, we will examine briefly the classical theory on private landlord-tenant relationships. The answer is more readily apparent in that case since the two parties involved have well-defined objectives. The tenants seek to maximise profits and the landlords ground-rents. Hence, the question arises as to the demarcation between them.

Ricardo gave the classical answer to this question at the beginning of the nineteenth century and, as 'Ricardian rent theory', it is still part of modern economics. In its current version it states that the price of the raw product is determined, like all other goods, by its marginal production cost, including the 'opportunity cost' of capital, giving the 'appropriation of land and the consequent creation of [ground] rent' no role at all (Ricardo 1821: 45). Marginal ground-rent is supposed to be zero. However, as lands of different quality, or additional investment in the same lands at decreasing productivity, are required to satisfy demand, *economic rents* appear. Hence, tenants can always afford to pay some ground-rent, even on lands of poorest quality. Moreover, competition among tenants to acquire leases will drive those economic rents, in the form of ground-rent, into the pockets of the landlords. However, as the tenants *qua* producers have to compete in the market, they cannot afford to pay more than that economic rent. Indeed, once lease contracts have been signed, the tenants will find it 'rational' to invest and expand production so long as it is profitable to do so, i.e. up to the point where marginal production costs are equal to market prices.

This is a captivating model. It is simple and consistent. Nevertheless, there remains the question as to whether it reflects the essential characteristics of the real world. The fact that some tracts of land become marginally profitable and, hence, a small ground-rent could be paid does not prove that the landlords will actually accept the deal. They may ask for a higher minimum payment, a *reservation ground-rent*.² In this case, some land would not be tilled because landlords were asking for higher ground-rents. Consequently, demand would have to

¹ For reasons which will become clear later (see footnote 5), in the context of the landlord-tenant relationship we use the more specific term 'ground-rent' in lieu of 'rent', the usual term in Ricardo's times.

² Marx called the landlords' reservation utility *absolute ground-rent* (Marx 1966: 756ff).

be met by additional investment in a reduced area, necessarily at higher marginal costs. The outcome would be higher prices for the crop.

Reservation ground-rent (the minimum ground-rent below which there is no deal) would only be zero if landlords were satisfied with collecting 'pure economic rents' (McDonald 1979: 36), however small their amount. Yet to convince them to accept a low payment costs time and money. The tenants, their employees, agents, and consultants, may spend a lot of effort convincing the landlord that they are offering the best deal possible. But looking at such an attempt from the viewpoint of transaction economics, one would correctly think that the money and time spent in negotiating could more effectively be used in making a better offer to the landlords in the first place. In other words, there will always be a positive reservation ground-rent, i.e. a minimum below which the deal is not worth the trouble. In practice this could be, for example in agriculture, some minimum payment per acre.

In fact, the result would then still look very 'Ricardian': because marginal costs of production would still be equal to market prices. The difference from the Ricardian model is that the marginal cost and, hence, market price, are definitely affected by the appropriation of land and the consequent creation of ground-rent. Yet these apparently 'pure economic rents' which the landlords collect are, partially at least, the result of landlords' demands and, therefore, not so 'pure' after all.

Moreover, Ricardo assumed – and this has been tacitly accepted so far – that the marginal product does not pay any ground-rent. This, however, depends on the *form* in which ground-rent is paid. If it is a fixed annual payment per acre (as usual in agriculture, for example) then, indeed, there is nothing to prevent the tenants from continuing to invest up to the point where marginal production costs equal market prices. However, if we suppose that the lessee is a sharecropper, i.e. the ground-rent consists of a certain percentage of the harvest, whether paid in cash or in kind, then there is no marginal product that does not pay ground-rent. If the percentage agreed upon is, for example, one-eighth, marginal production costs are limited to seven-eighths of the market price. The remaining one-eighth has to cover the ground-rent.

Contrary to Ricardo's expectations, sharecropping has not disappeared in agriculture. In mining it has remained a prevalent system although the percentage of the product the landlords get is called a *royalty*. The most important examples of this in modern economic history are British coal and American oil (Mommer 1997). Earlier coal leases – in the fifteenth and sixteenth centuries – followed the pattern of agricultural leases, i.e. ground-rent was paid in the form of fixed annuities. However, this arrangement soon proved to be

inadequate in the case of mining. On the one hand, when contracts are signed, neither side normally knows how big or small the deposit to be discovered would actually be. Hence, contractually fixed annuities, for a period of twenty-one years and more, would be poor estimates of the ground-rent tenants could afford. Furthermore, the deposit could be depleted faster or slower, depending on the intensity of exploitation. Fixed annuities provided the tenants with an incentive to exploit the mineral deposit as fast as possible, to the disadvantage of the landlords, although in years of depressed markets they could also be to the disadvantage of the tenants. As a result, annuities were converted, first, into a ground-rent per unit of output (a fixed royalty) and later, to take into account variation of prices, and inflation, into percentage royalties.³ Groundrents thus varied according to the size of the discovery, the intensity of exploitation, and prices. With fixed royalties, landlords and tenants share the risk regarding volumes; with percentage royalties they also share the price risk.

Essentially the same observations obtain for the history of leases in American oil, going back to the mid-nineteenth century. This history, however, is not only much shorter but also much more clear-cut. A percentage royalty has been the typical form of ground-rent in oil leases, almost from the beginning and without exception.

However, if one construes royalty in mining as a normal form of ground-rent – not of an ancient or ‘outmoded’ form (Kemp, Stephen and Masson 1997: 11) bound to disappear in modern times, but as a modern form developed by market forces – Ricardian rent theory loses the appearance of validity. Ricardo was aware of this fact and, in order to get around it, he defined [ground] rent in a very peculiar way:

[Ground-] Rent is that portion of the produce of the earth, which is paid to the landlord for the use of the original and indestructible powers of the soil (Ricardo 1821: 67).

Accordingly, ‘royalty is *not* a [ground] rent’ (Marshall 1961: 483) at all but a payment in ‘consideration of the valuable commodity’ (Ricardo 1821: 67), the price for ‘the sale of stored-up goods’, albeit ‘stored-up by nature’ (Marshall 1961: 483). Whatever the justification of ground-rent may be, the fact is that royalties have to be paid to the landlords because those ‘goods stored-up by nature’ are ‘now treated as private property; and therefore, the marginal supply price of minerals includes a royalty in addition to the marginal expenses of working the mine’ (Marshall 1961: 483). In other words, because of royalty, marginal production costs are not equal to market prices, which would be the case if there were no landlords and the

³ This story came to an end in the UK with the nationalisation of coal, the natural resource, by a conservative government in 1938.

miners did not have to pay royalties. Hence, the use of the land, even though it is leased, is restricted, and this necessarily entails another increase in prices. The appropriation of land, therefore, and the consequent creation of ground-rent not only play a role in the determination of prices, but they play indeed a very important one.

2.2 A Political Manifesto

Analytically, ground-rents consist of two components: (1) the reservation ground-rent, paid for by consumers through higher prices, which ultimately reflects the existence of the landlords; (2) those 'pure economic rents' which are rightfully called Ricardian rents.⁴ Ricardian rent theory is fundamentally flawed, in so far as it fails to recognise the first component. This, however, begs the question: why, then, is it still accepted, unchallenged, in modern economics? In my opinion the reason is that it corresponds to the ideal world of modern economics where only two factors of production are allowed to exist: capital and labour. Landlords have been willed away so consistently and radically that even the corresponding vocabulary has disappeared.⁵ Economists, looking at the real world and taking Ricardian rent theory as their standard, have discovered not that the theory is wrong but that the real world is imperfect. As a result, Ricardian rent theory is no longer conceived as a model representing the real world but the world as it should be. It has become a political manifesto with which to bring down the landlords who cause the friction in an otherwise perfectly working engine.

2.3 Taxation

There is another interesting twist to the story. Pure economic rents, by definition, do not affect the flow of investment and, ultimately, production. Hence, whether the landlords really manage to get hold of all pure rents or not, is irrelevant. From the labouring classes' and entrepreneurs' viewpoint, the less the landlords get the better. As recipients of pure rents landlords were ideal targets for taxation:

A tax on [ground] rent would affect [ground] rent only; it would fall wholly on landlords, and could not be shifted to any class of consumers. The landlord

⁴ Marx called them *differential rents* (Marx 1966: 756ff).

⁵ Thus, for example, in *The New Palgrave – A Dictionary of Economics* (1998), under the entry 'Rent' the following definition is given: "Rent' is the payment for use of a resource, whether it be land, labour, equipment, ideas, or even money. Typically, the rent for labour is called 'wages'; the payment for land and equipment is often called 'rent'; the payment for use of an idea is called a 'royalty'; and the payment for use of money is called 'interest'".

There is no entry for 'Royalty'. As a matter of fact, the generalised use of the word in mining industry is of relatively recent vintage. In Ricardo's times 'royalty' still referred exclusively to ground-rent paid to the Royals; he never used the term in his writings (Nef 1932: vol.i, 318f).

could not raise his [ground] rent, because he would leave unaltered the difference between the produce obtained from the least productive land in cultivation, and that obtained from land of every other quality (Ricardo 1821: 173).

In other words, although Ricardo first seems to defend the landlords in the sense that they were not responsible for the high price of foodstuff – corn prices were actually the issue at stake – he concludes that in practice the state should take aim at them through taxation. As a matter of fact, the idea that landlords should be taxed so that taxes can be lowered elsewhere, is as old as Political Economy itself. It was already advocated by French Physiocrats in the eighteenth century.

Ideally, from a liberal viewpoint, landlords should get nothing at all and disappear. A solution suggested by some radical followers of Ricardo was to nationalise the land and then to license it, the licensees paying taxes to the state in lieu of ground-rent to the landlords. This is what actually has happened, not in respect of land but, partially at least, in mining, and especially in deep mining. The deeper are the mines, the more the landlords become a nuisance, not because of ground-rent but because of their obstruction to efficient mining (Mommer 1997). Indeed, deep mines were often in public ownership from ancient times, the only really important exception today being, as already mentioned, the United States. Thus, in lieu of paying ground-rent to private landed property owners the mining companies were supposed to pay special taxes to the state.

This is, then, what *liberal fiscal regimes in oil* are all about. The public ownership of the natural resource is understood to be a non-property – a free gift of nature, or free state property – and no private landlords exist. In this sense, there is no public *landlord* either. The role of the state is supposed to be that of a licensing agency and regulator, essentially the same as in any other sector of the economy. Reservation ground-rent is thus brought down to zero. Liberal fiscal regimes target only, and exclusively, Ricardian rents. Hence consumers are favoured by lower prices. Yet there remains the fact of Ricardian rents and of prices being significantly above average costs. Collecting those rents favours consumers in their capacity as taxpayers, through lower-than-otherwise taxes.

2.4 Taxation and International Groundrent

Public ownership *per se* does not entail, necessarily, a liberal fiscal regime. Public ownership may be conceived, above all, as national ownership, and as such it can be subject to all kinds of nationalist policies. Private national oil companies may be favoured in the granting of concessions, or a public national oil company may be created. Foreign concessionaires may

be obliged to employ mainly nationals, to buy nationally produced inputs and services, or to refine a certain percentage of the crude oil produced within the country and supply the domestic market at preferential prices. In the case of oil-exporting countries, the state (or even the local government of an oil-exporting region) may act as a landlord imposing taxes that are, in effect, an international (or interregional) ground-rent. This has been especially attractive to developing countries as the abilities and infrastructure required for a nationalist, industry-oriented oil policy may be limited, whereas to collect royalty, for example, is simple. These countries may even cartelize in order to maximise their reservation ground-rents, as some did by establishing OPEC (Mommer 1983).

Concessionaires, or tenants, instead of dealing with a liberal state and a liberal fiscal regime, may have to confront a sovereign landlord state and a *proprietary fiscal regime*. Hence, there are fundamentally two different classes of fiscal regimes in oil: liberal and proprietary. The first one reflects the liberal ideal that guarantees the companies free access to the natural resource as such and, thereby, supplies consumers with oil at cost price.⁶ The other reflects the national interests of the oil-exporting country with its government acting as landlord within the international economy, similar to private landlords within a national economy.

Therefore, our critical observations on Ricardian rent theory and modern economics fully apply to the discussion of fiscal regimes in international oil. The existence of landlord states is usually ignored. OPEC is usually treated as a producers' cartel, not as a cartel of landlord states. This even applies to OPEC itself, although it generally rejects, bashfully, the epithet 'cartel'. Regarding ground-rent, the organisation always shared the arguments on non-renewable resources and their alleged intrinsic value going back to the writings of Ricardo.⁷ Nevertheless, what OPEC actually did in the 1960s with extraordinary success, was to develop a proprietary fiscal regime. By the same token, the reaction of international oil companies and consuming countries to the 'OPEC revolution' of the 1970s has been the promotion and imposition of liberal fiscal regimes elsewhere. Of course, to reverse the situation within OPEC countries is their ultimate goal. Hence, wherever oil-exporting countries today find themselves compelled to re-open their oil sector to private investment,

⁶ As this is the only fiscal regime Kemp, Stephen and Masson actually consider, they conclude, 'an efficient tax system is one which is targeted on economic rents and collects a share of them' (Kemp, Stephen and Masson 1997: 9).

⁷ '...Member Countries' right to receive compensation for the intrinsic value of petroleum is incontestable'. OPEC Res. IV.33, 1962.

they are confronted with a package: to accept, together with private investment, the liberalisation of their fiscal regimes.

Liberalisation in oil is thus part of the present trend towards a globalised world, a world where the sovereign territorial nation-state seems to fade away and with it, of course, the concept of national ownership of the natural resource. For the same reason, this trend also affects all kinds of nationalist and protectionist policies. In a globalised world, the ownership of the natural resource as a lever for national development is no longer seen as a legitimate tool. We shall now discuss and compare the two types of fiscal regimes: liberal and proprietorial.

3. LIBERAL FISCAL REGIMES

3.1 Supply of New Lands

The starting point of any fiscal regime is the supply of land by a licensing agency. Within a liberal framework, the agency will aim to provide a continuous flow of land (assuming it is available) in order to maintain a flow of investment, and land will be offered as soon as expectations match the reservation utility of the investor. (In this paper, we will assume that the 'reservation utility' of the investor is an internal rate of return (IRR) of, say, 15 per cent). Moreover, marginal lands will not be subject to any petroleum taxation. Although *ex-post* profits may be high in some cases, these profits will only be expected to compensate for losses in other cases. Thus, for example, in liberal Britain the new licences in the North Sea are not subject to any petroleum taxation since the area still available is considered to be marginal.

3.2 Awarding Licences

The next problem the licensing agency will have to face is to decide to whom a contract should be awarded. Establishing criteria that the applicants must meet in order to be eligible may still produce a long list. What are, then, the criteria for the ultimate decision? Whatever they are, they should not create distortions nor hamper the free flow of investment. The most obvious device is to ask for a signature bonus.

On marginal lands, it might be expected that the bonus would be small, although in practice this may not be the case. A piece of land considered as marginal by the licensing agency may look highly profitable to some companies, either because they have at their disposal some additional information not available to the agency or, for instance, as a result of new technologies they have developed. Thus, lands that previously had been considered marginal may suddenly become very attractive. Hence, the agency may find from time to time that it is offering higher value land as if it were marginal. In this case, even if there were a fiscal regime in place to collect excess profits efficiently, there would be an expectation of higher bonuses. It has been argued that bonuses may be the optimal decision-making device because it is left to the competing companies to evaluate the expected economic rent, beyond and above the fiscal regime in place. In theory, fiscal regimes in oil could be superfluous (Mead 1994). However, where expectations are high, this would involve very high bonuses. For example, if a prospect offers expectations of excess profits equal to the reservation profit

– and this is not an unusual case in world oil – the bonus would require the investor not only to double his investment, but half of it would have to be paid upfront. Thus, pure bonus bidding would significantly weaken the flow of investment. It would imply the paying in advance of excess profit taxes on *expected* excess profits, contrary to the principle that income tax is paid when incomes actually arise. For this reason bonus bidding is acceptable, from a liberal viewpoint, as long as it remains, basically, a decision-making and not an excess profit-collecting device.

Of course, there are other bidding parameters available. Upstream contracts are usually awarded with a series of conditions attached to them. For example, there may be a minimum obligation to explore. Hence, the amount to be spent in exploration may be, and has been, used as a bidding parameter. The same obtains for all bidding parameters: they are acceptable as long as they function as decision-making devices. The main problem is, however, to design a proper fiscal regime and then, if necessary, to complement it with additional contractual payments or other conditions according to the specific characteristics of the lands under offer, leaving only a narrow margin to be used in, or be subject to, the awarding of the contracts. In the United Kingdom, although bonus bidding has been used in a few cases, the Department of Energy and now the Department of Trade and Industry (DTI) have generally awarded licences in a discretionary process of negotiation. Signature bonuses are sometimes part of these negotiations, but they have always been very limited.

3.3 Exploration Period

The licensing conditions covering the exploration period will aim to make efficient use of the available resources. There will usually be an obligation to explore within a given time period – maybe a few years, possibly up to ten or even fifteen years – and to relinquish at specified intervals parts of the area where no commercial discovery has been made. There will be no economic rents to collect at this stage although their existence, and their order of magnitude, will be confirmed by the end of the period. The licensee will be given the full benefit of his exploratory effort; at least to the extent the discoveries are within the licensed area. Moreover, if the discovered reservoir extends beyond the licensed area, the original area may be reshaped accordingly.⁸

⁸ This is the case, for example, in France, the homeland of liberal mining laws (Drouard and Devaux-Charbonnel 1966: 58).

3.4 Production Period

It is in the production period that the problem of an appropriate economic rent-collecting device has finally to be settled. The problem is that any additional fiscal take, on top of the normal non-oil taxation, will create an incentive for the licensees to minimise their liabilities. Obviously, the higher the fiscal take, the stronger that incentive. For example, it may become profitable for the licensee to set up independent service and input producing companies which will be subject only to normal taxation, and then to outsource all kinds of activities; or to manipulate transfer prices in favour of affiliated refineries. On the other hand, since investments are usually depreciated over several years while operating costs are recovered the same year, high fiscal takes may create a strong bias against capital-intensive technologies. If exploration expenses, in the case of failure, are dealt with as losses to be written off the same year, a strong incentive may be created to explore even submarginal lands.

Hence, the economic rent-collecting agency may require a specialised and highly qualified bureaucracy, and may have to absorb high surveillance costs. On the other hand, it may create serious distortions, inefficiencies and perverse incentive problems. There is a trade-off between the precision with which the target is hit, and the costs involved in administering the system and the losses in production and productivity. Characteristically, liberal fiscal regimes are designed to minimise the latter. As this requires the marginal fiscal take to be zero, these regimes are usually based on excess profit taxation. Yet, licensees must be left with some share of excess profits in order to provide incentives to take up first the best tracts of lands available, as well as to increase productivity. A long-term view is essential since productivity due to geology, and productivity due to technology and efficient management, are closely, and ultimately inseparably intertwined. What yesterday was considered a new technology may today already be standard and, therefore, 'natural' productivity needs to be continuously reassessed.

Thus, for example, the main excess-profit collecting device in the UK, the Petroleum Revenue Tax (PRT), is based on cash flow. Accordingly, investments and current expenditure are treated alike. PRT has to be paid once the accumulated cash flow becomes positive. But there are several 'safeguards' and 'uplifts' to ensure that PRT cannot, even accidentally, cut into the normal profits to which the licensees are entitled. And if the cash flow becomes negative at a later date, PRT is repaid. On the other hand, to prevent excess-profits from being transferred to lower-taxed businesses elsewhere, but also to prevent losses elsewhere from being brought in and offset against high-taxed profits, PRT is based on 'ring-fenced' reservoirs. On top of PRT, the licences are subject to normal taxation, PRT payments being

accounted for as costs. (Another good example of a liberal fiscal regime is Australia's so-called resource rent tax, somewhat more sophisticated. It amounts to an excess profit tax that becomes effective once the IRR of a venture turns positive and above a threshold profit rate).⁹

Under the PRT system the licensees have the choice to plough back excess profits into the reservoir as a complete and immediate offset against any PRT liability. This may be seen as a subsidy. Only when the licensees are finally unable to find any additional investment opportunity to squeeze out of the reservoir a few additional profitable barrels does the payment of PRT become inevitable. The overall outcome, lower-than-otherwise prices, is welcome. The downward-elasticity of the liberal fiscal regime is one of its most outstanding characteristics. To favour non-oil taxpayers through a lower level of taxation by collecting excess profit taxes on oil is generally considered a second best solution, while the preferred solution is to favour consumers through lower prices.

3.5 Renewal

Licences generally extend over several decades. Nevertheless, reservoirs may last even longer. What happens in this case? Within a liberal framework, in order to maintain a steady flow of investment, the most logical thing to do is to renew the licence. A change of licensee, particularly if challenged, may involve a costly interruption and, at worst, the loss of what remains in the reservoirs. It may, however, provide an opportunity for the licensing agency, or the licensee himself, to update the terms of the licence.

In the UK no licence has yet expired, since the first ones were granted in the 1960s for forty years. In the next decade some will in theory expire, although the issue is never mentioned or discussed. One may infer that they will be renewed as a matter of course.

⁹ For an overview on fiscal regimes in general, see Johnston (1994).

4. PROPRIETORIAL FISCAL REGIMES

Proprietorial fiscal regimes are more complex than liberal ones as they have to take into account a third party, the landlord state. Apart from the economic rents that may, or may not, exist, the landlord asks for a reservation ground-rent as a *sine qua non* condition. More generally, the ground-rent-collecting devices have to respond to both parties' concerns that they should not get less than their 'fair' share, so that it is necessary to distinguish clearly profits and ground-rent in order to set one against the other.

4.1 Supply of New Lands

Within a proprietorial framework the licensing agency will only supply new land when its expected profitability covers the reservation utilities of both tenants and landlords. Thus, for example, taking into account the minimum conditions defined by the fiscal regime, it may turn out that the expected IRR has to be 30 per cent, under the fiscal regime, there is – in substance, if not necessarily in form – a 50:50 profit sharing between the landlord and the tenant.

Another way to look at the same issue is the following. What would the minimum price level be at which a prospect would still yield a reservation profit, if it were not subject to a proprietorial fiscal regime? The answer may be, for example, US\$ 15 per barrel, the reservation profit amounting to US\$ 3 per barrel. However, if the fiscal regime provides for an *ex-ante* reservation ground-rent of another US\$ 3 per barrel, there will be no investment as long as the expected price level is not, at least, US\$ 18 per barrel.

Hence, wherever landlord states play an important role, there is a striking discrepancy between the abundance of the natural resource and the restrictions imposed on the investors. Thus, within OPEC the access to oil-bearing lands – i.e. investment, be it private or public – has always been severely restricted. As a result, even though three-quarters of the world's proven reserves are located within that area, it only produces one-third of the world's output. On the other hand, in the most liberal oil-producing (and even exporting) country of the world, the UK, where the proven reserves only account for 0.4 per cent of the world's total, production amounts to 4 per cent of the world's output.

4.2 Awarding Contracts

Awarding a contract provides the landlord with the first opportunity to collect ground-rent. However, even on marginal land – defined as marginally profitable but profitable for both,

landlord *and* tenant – the reservation ground-rent may be too large to be collected in the form of a signature bonus upfront, since this would be far too risky for the tenant. Hence, although signature bonuses play an important role within a proprietorial framework, they are basically used to squeeze out from the tenant the excess profit beyond that which is covered by the fiscal regime in place and the special conditions established for the tracts of land under offer.

Because of this limitation on the size of signature bonuses, they may be scattered over the contract period, to be paid in the event of commercial discoveries, of daily or accumulated production reaching a certain level, and so on. Furthermore, royalty rates, especially sliding-scale royalties, may become bidding parameters.

4.3 Exploration Period

The next opportunity to collect ground-rent is during the exploration period. There may be rental payments, but also bonuses, the triggering event being commercial discoveries. More importantly, the landlord can use relinquishment provisions to oblige the tenant to hand over not only unexplored but also successfully, or partially successfully, explored pieces of land. The landlord in this way is in a position to obtain a higher ground-rent from a future tenant. He also benefits from any relevant information as to the prospectiveness of neighbouring land which, of course, will add to the attraction of the area.

The output of the exploration period is knowledge, either the certainty that there is oil or not, or a change in expectations. To do its job properly the licensing agency, whatever the fiscal regime, will always be interested in sharing that knowledge. In proprietorial regimes, however, the landlord state uses its knowledge to recover land that has appreciated in value and, thereby, to secure to itself a larger stake.

4.4 Production Period

Let us suppose that landlord and tenant have agreed to a 50:50 profit split in the production period, on top of what the landlord may already have received in bonuses, rentals, the increased value of relinquished and surrounding lands and, of course, normal taxation. The most obvious way in which to achieve this would be to impose an additional 50 per cent levy on profits. However, this would entail the surveillance problems already mentioned. Furthermore, the landlord would not wish to be at the mercy of the entrepreneurial decisions of his tenant; for example, the tenant may have good reasons to carry on with his business at low prices, even if there is no profit, or even to sustain losses. However, that would leave the landlord without ground-rent.

The solution in private leases, generated by market forces, is a fixed or a percentage royalty, and this solution has been taken over by all landlord states. For example, let us suppose that according to *ex-ante* computer modelling a fixed royalty of US\$ 3 per barrel, but also a percentage royalty of one-sixth, would both be equivalent to a 50 per cent profit levy. The royalty mechanism will still have a beneficial effect on the landlord-tenant relationship. In the first place, the tenant has the simple alternative of producing and paying royalty, or not producing; but is free in his investment decisions. Secondly, since royalty is part of the unavoidable operational costs, it represents an *ex-post* reservation ground-rent (always lower than the *ex-ante* reservation ground-rent). The price floor is lifted by US\$ 3 per barrel in the one case, and by 20 per cent over production costs in the other. The outcome is higher-than-otherwise prices. In other words, whereas liberal fiscal regimes are expected to adapt to any profitable investment project and are deemed to be inefficient if they do not, in proprietorial fiscal regimes investment projects are also required to adapt to the fiscal regime in place. The landlord shares the risk only as far as volumes, or volumes and prices, are concerned, not profits. Hence, at low volumes or prices, profits may disappear but not ground-rent.¹⁰ Of course, this also implies that at higher prices the tenant should receive a share large enough to compensate for the years of losses and/or low profitability. Thirdly, since royalty derives from prices and volumes, surveillance costs are much lower than in the case of a profit-related levy. The importance of this point to both sides should be stressed, as even royalty may generate lengthy and expensive litigation.¹¹ In this respect a fixed royalty is more advantageous, because only volumes but not prices have to be checked, although the drawback to fixed royalties is that they do not adjust automatically to inflation. To overcome this, both forms of royalty may be combined in a percentage royalty with a guaranteed fixed minimum.

There is, of course, a disadvantage to royalty generally. Wells approaching exhaustion may be abandoned and some barrels left underground, probably forever, because of royalty.¹² Yet this is the essence of the reservation ground-rent. It defines *ex-ante* a minimum expected

¹⁰ This feature of proprietorial fiscal regimes, from a liberal perspective, is usually denounced as 'regressive' and, of course, as 'undesirable' – (Kemp, Stephen and Masson 1997: 10).

¹¹ Thus, for example, in the early 1990s the oil companies operating in Alaska, after a legal battle with the government of Alaska carrying on over more than a decade, were forced to pay arrears in royalties going back to 1977, totalling US\$ 3.7 billion. The point of discord was the way the companies calculated wellhead prices, on which royalty payments are based (Platt's Oilgram News 1994/11/21: 3).

¹² In Venezuelan Law the problem has been dealt with in the following way. There is a reservation royalty of one-sixth. However, if necessary in order to continue exploiting certain concessions, the Executive may reduce this rate at its discretion. But it is also empowered, at its discretion, to restore the one-sixth royalty at any time. Hence, this arrangement makes it possible to squeeze out of the reservoirs some additional barrels that would be lost otherwise, but no investment can be made based on a lower royalty rate (*Ley de Hidrocarburos* 1943: Art.41).

rate of return in order to consider a tract of land worthy of being explored; *ex-post* it defines the minimum payment that allows a barrel of oil to be lifted. It is for this very reason that bonuses are used, up to a certain point, to collect differential rents. For example, bonuses may be due when the daily, or accumulated, output of a well exceeds certain volumes. Given the limitation of bonuses, however, when there are high excess profits, royalty will return to the scene; for instance, in the application of a sliding-scale royalty, in addition to the reservation royalty, to be triggered by a set of well-defined events.

4.5 Reversion

What happens when a lease falls in and oil is still flowing? The landlord would certainly be willing to take over a going concern, an option that may be established in the original contract. Thus, the tenant may be obliged to maintain the lease in good working order and to hand it over free of charge; this would be the end of the contract, just as the signature bonus was the beginning. Subsequently, as part of a new deal, the landlord will be able to pass on the lease to a new tenant, or even to the same one, but at a higher ground-rent. Actually part of the increase may reflect not ground-rent proper but interest payment for the capital sunk into the ground by the former tenant but which became the property of the landlord.

It is not surprising, therefore, that in practice there are serious problems of enforcement. As reversion approaches the tenant will wish to minimise his investment. The more successful he is in writing off the installations, the more willing the landlord will be to negotiate the renewal of the lease under reasonable conditions and well in advance of the date the lease is supposed to fall in. This is because if the lease is really run down and production ceases, the tenant may have created a situation in which the landlord is worse off than at the time the lease was first granted. Likewise, the more the tenant is forced to keep his investment going until the end of the contract, the worse off he will be then. Thus, the conflicting interest between landlords and tenants reaches a critical point at the time of reversion. It is one thing for the tenant to pay ground-rent but quite another to be stripped of his investment, albeit at the end of the contract. Though this may be stipulated by the contract he signed, he will never really accept it.

In general, the landlord will prefer shorter, the tenant longer leases. For the tenant the ideal solution would be a term that was long enough to exhaust the reservoirs. This is what happens in the United States, where the tenants have managed to have the law on their side enabling them to force the landlords to concede open-ended leases that will last as long as oil is produced in 'paying quantities'. However, the usual solution is an intermediate one, an

option for renewal, to become effective after a certain fraction of the lease term has elapsed and a certain number of years before the contractual term is completed. This amounts to an option to renegotiate the lease in order to prevent the reversion of a going concern. This option, of course, in one sense exists anyway, even if it is not written into the contract, as renegotiations are always possible if both parties agree to them. In practice, therefore, renegotiations may be considered the norm. Nevertheless, it should be pointed out that this still involves a major obstruction to the development of production and productivity, since the tenant continues to be faced with a finite horizon. At some moment the landlord will evaluate his performance and the better it has been the higher will be the increase in ground-rent. On the other hand, the tenant will be inclined to withdraw from capital-intensive and upfront loaded investment projects, at least fifteen years ahead of the possible date of renewal.

4.6 Proprietorial Fiscal Regimes and National Oil Companies

Transaction and surveillance costs are crucial ingredients to the understanding of upstream contracts and fiscal regimes. However, these costs are very different where (i) a large number of (small) companies acquire leases from a large number of (small) private landlords; (ii) a small number of large oil companies negotiate contracts with a small number of landlord states. Large international oil companies negotiating major upstream contracts all over the world can afford a highly qualified staff of lawyers, economists, engineers, political scientists, psychologists, experts in public relations and opinion making, and experienced negotiators. Of course, they also create a market for such teams to thrive as independent consultants. Similarly, the landlord states can afford to set up Petroleum Ministries with qualified bureaucracies, and even to join forces in a cartel, as they did with OPEC.

Nevertheless, there are limits to what even highly qualified bureaucracies can do. One way to go beyond these limits is setting up national oil companies (NOCs).¹³ As windows on the industry, able to acquire detailed experience in the oil business, NOCs can narrow significantly the informational gap between the international companies and the Ministries. Even the surveillance of very complex contracts may then become feasible, from defining detailed exploratory programmes and relinquishment procedures to excess profit levies and reversion. Of course, the contracts may also include an option, in favour of the NOCs, to participate in the development of any commercial discovery. By so doing, on the one hand,

¹³ Historically, the first NOCs were set up in consuming countries, in the first half of the century, either to secure supply from distant sources (Europe), or to reduce dependency from costly imports (Latin America). Oil-exporting countries were late in setting up their NOCs, in the second half of the century.

whatever excess profits the landlord states were unable to obtain through the fiscal regimes may now be obtained as dividends, at least up to the share of the NOCs in the venture. On the other hand, and more importantly, through their participation they gain full access to all relevant information and the right to share in all management decisions.

One of the most well-known contracts of this kind is the so-called production sharing agreement (PSA). In these agreements one share of the oil produced is identified as 'cost-oil', set apart to cover costs of the investors, the other part is identified as 'profit-oil' to be split between the NOCs and the private parties. For example, 35 per cent may initially be defined as 'cost-oil', an upper limit to production costs; the remaining 65 per cent represent 'profit-oil'. But once the initial investment is recovered and production costs decrease below the 35 per cent mark, the share of profit oil increases accordingly. The participation of the NOCs in the management of the venture is crucial in order to be able to control these costs. As soon as they become lower, the part defined as 'profit oil' increases. Next, let us suppose that the profit-oil is split 70:30 in favour of the NOCs. Hence, the NOCs get as a minimum 45.5 per cent ($=70\%*65\%$) of gross production and the private parties as a maximum 19.5 per cent ($=30\%*65\%$). As a maximum the NOCs may get up to 70 per cent of gross production, and the private investors 30 per cent. As the NOCs usually do not share the exploratory risk and only join in after a commercial discovery has been made, and their share in investment may be completely financed by the private parties, these arrangements are quite close to the landlord states getting a royalty between 45.5 and 70 per cent. Thus PSAs are similar to those leases already in the previous section including a sliding-scale royalty. The difference is the presence of NOCs able to monitor efficiently costs and, hence, the possibility to tie royalties effectively to costs.¹⁴

Generally speaking, the role of NOCs in PSA or joint ventures is primarily *not* that of business partners but of the landlord states' ground-rent collecting agents. Their task is to maximise fiscal revenues. This means, on the one hand, that they are supposed to use their share in production to influence prices and, on the other, to maintain costs and profits of the private investors at a minimum. This minimum is given by the opportunity costs of capital input and production services provided. The private share of 'profit-oil' is intended to be an approximation to this minimum. Ultimately, the minimum may actually be reached by transforming the tenant companies into production services providers contracted by the NOCs. As such, these companies may continue to produce oil just as they did before but now

¹⁴ For more details see Johnston (1994), *passim*.

on behalf of the NOCs, the private investors being rewarded according to their investment and their services. At that point, however, the ordinary landlord-tenant relationship discussed earlier is completely reversed. The contracts no longer specify what the landlord will get but the costs and profits to be paid to the production services providing companies.

Oil companies are then formally considered analogously to public utilities subject to a regulatory framework guaranteeing to them a normal profit but preventing them from realising excess profits. This was an option argued, for example, by Rouhani, a former Secretary General of OPEC:

It goes without saying that the states that are legal owners of petroleum resources as well as guardians of the public interest have the duty of regulating the petroleum industry, which is so obviously a public utility, in all its phases and from all points of view (Rouhani 1971: 54).¹⁵

The difference in this case would be that the absence of excess profits would not favour consumers through lower prices but the landlord states through higher ground-rents.

This kind of contract – which could be called ‘production services contracts’¹⁶ – requires necessarily complex regulatory frameworks, with the Ministries of Petroleum and the NOCs as regulators. There must be incentives for the production services providing companies to deliver those services productively and efficiently. Obviously enough, the mere complexity of these frameworks entails high surveillance and transaction costs. As a matter of fact, the best option may then be outright *nationalisation*. Whatever the losses in productivity and efficiency of NOCs as compared to private oil companies, those costs may be higher. Moreover, and perhaps most importantly, the landlord states are then free to manipulate volumes and prices according to their interests.

¹⁵ In Venezuela, Pérez Alfonzo sustained the same viewpoint as early as 1943. See 'Voto Salvado por el Doctor Juan Pablo Pérez Alfonzo', reprinted in Vallenilla (1998: 611–620).

¹⁶ Unfortunately, no appropriate and generally accepted nomenclature exists for upstream contracts generally. See Johnston (1994), 'Semantics', pp. 3–4. In practice, the same term may cover everything from a plain concession to a production sharing agreement, and a specific contract may be labelled with one name or other for purely political or legal convenience of the moment. For example, according to Venezuelan law, association agreements have to be approved by Congress but not so operating services agreements. Hence, labelling an association agreement as an operating service agreement is a way to bypass Congress (Mommer 1998).

5. COMPARISON OF LIBERAL AND PROPRIETORIAL FISCAL REGIMES

Table 1 summarises the basic characteristics of liberal and proprietorial fiscal regimes, from one extreme to the other. Liberal fiscal regimes involve an extreme from where there is no landlord and the natural resource is considered a free gift of nature. In the extreme from proprietorial fiscal regimes, the tenant companies disappear in their capacity as tenants and are reduced to production services providing companies contracted by NOCs. Thus, in both extremes the landlord-tenant relationship vanishes. A radical liberal fiscal regime defines an exclusive relationship between consumers and producing companies and the primary objective, to be achieved through competition between companies, is low prices. Performance in terms of economic rent collection is only a distant secondary issue. On the other hand, a radical proprietorial fiscal regime defines an exclusive relationship between consumers and landlords. Competition between the production services providing companies does not benefit consumers but the landlord states.

In practice, fiscal regimes may fall anywhere between these two extremes. There is no single liberal or proprietorial fiscal regime that will work well under all circumstances. Even within one country there may be different fiscal regimes in place for different regions, or for different qualities of oil, and each may work well only as long as there are no extreme variations in prices or productivity. Any regime therefore needs to be adjusted to significant changes in economic circumstances, even when there are stable governance structures in place, i.e. a stable political, social and institutional environment that takes into account the interests of consumers, producing companies, and landlords. But governance structures may not be stable, and that may entail changes in the fiscal regime in oil even though economic circumstances are constant. Furthermore, changing governance structures and economic circumstances may reinforce each other; for example, higher or lower oil prices may trigger changes in the fiscal regime, and these changes may in turn entail even higher or lower prices.

Moreover, the different national fiscal regimes and governance structures are linked through the world market. They have to compete on the economic front; politically, their national characteristics have to confront, to adjust to, or to screen themselves off from, developments within the international economy. The world as a whole being a consumer, one would expect a trend towards liberal fiscal regimes and the progressive weakening of the landlord states to dominate in the long run. The world economy would thus follow the same path as the national development in nineteenth-century Europe which led to the political and economic weakening of landed interests. This general trend has experienced, however,

important and quite long-lasting counter-trends. A further qualification is that although landed interests have largely lost their importance, they have not, and will never, disappear completely. Indeed, they remain surprisingly robust within specific areas of activities. And this is the case of international oil.

Table 1: Liberal and Proprietary Fiscal Regimes

<i>FISCAL REGIMES:</i>	<i>LIBERAL</i>	<i>PROPRIETORIAL</i>
<i>Objective:</i>	<i>Economic Rents</i> Free flow of investment Regulatory framework	<i>Groundrent</i> Investment flow and production subject to payment of compensation to natural resource owner Business relationship
Supply of new lands	<i>Ex-ante</i> reservation profit	<i>Ex-ante</i> reservation profit and reservation ground-rent
Bonuses	Signature bonus as decision-making device only	Decision-making and ground-rent-collecting device
Relinquishment	Discretionary	Recovering appreciated lands
Development and production	<i>Ex-post</i> reservation profit	<i>Ex-post</i> reservation profit and reservation ground-rent
Principal form of collection	Excess profit levy	Royalties
Duration of contract	Indefinite, or renewable as a matter of course	Shorter, offering opportunity to increase ground-rent taking advantage of reversion of producing facilities
National Oil Company	Not applicable	<i>Expertise to specify and control variables above</i> Joint ventures Production sharing agreements Production services contracts Nationalisation

6. A HISTORICAL NOTE

6.1 The United States: A Conciliatory Fiscal Regime

As already mentioned the US oil industry developed on the basis of private leases. Typically, the lessees have to pay a signature bonus, rentals, and standard royalties. In most parts of the USA the royalty rate is one-eighth, but in some one-sixth. Leases last as long as oil is produced in 'paying quantities'. Hence, property owners never get a second chance to increase their ground-rent but only obtain what was agreed on when the leases were signed in the first instance, i.e. at a time when the existence of oil has not been proven and, most probably, their lands were more or less marginal. Oil companies continuously acquire new lands and they do so whenever their expectations match their reservation profits. Private landlords, on the other hand, were, in general, easily persuaded to let their land with cash upfront – signature bonuses – accepting the usual standard royalty (Mommer 1983: 7–44).

On public lands state and federal governments followed the pattern established by the private sector, but the informal negotiations between private landed property owners and the companies have been replaced by transparent public bidding. The government thus accepted that private law governed leases on public lands and, hence, the popular American view that '*a contract is a contract*'. As for excess profits, they were not subject to any special fiscal regime (but see below) as it was generally accepted that the signature bonus had already settled that question once and for all.

6.1.1 Depletion Allowance

Sovereign taxation was used to give advantages not only to oil but also to all mineral industries and royalty owners. Indeed, in 1926 a 'percentage depletion allowance' was enacted in formal recognition of the intrinsic value of oil, which later was extended to all minerals. Accordingly, a certain percentage of the gross income of mineral industries and royalty owners was exempt from income taxes. This percentage was supposed to represent the equivalent of the depletion of the reservoirs in terms of 'natural capital'. In the case of oil, it was set at 27.5 per cent. Lower percentages applied to other minerals. In other words, mineral ground-rents in the USA not only were not targeted through special taxes but were in fact privileged. One has to keep in mind that in the USA royalty owners were a geographically and socially widespread group that included farmers, ranchers, and simple house-owners. They were not known for a lavish life-style; their political power as voters was considerable, even decisive in some states, and they had powerful allies in the mining companies. The depletion

allowance was applied according to the sharing of production so that, if royalty was one-eighth, the lessor got one-eighth of the allowance and seven-eighths went to the lessee. The taxpayer, as usual, had to foot the bill.

This privilege granted to mineral property owners and mining companies lasted almost fifty years before it became a casualty of the 'OPEC revolution' of the 1970s.¹⁷ Indeed, in 1973 the American government tried, for a last time, to deal with an imbalanced market by freezing prices within the USA, and attempted to extend this worldwide through the international American oil companies. But the mechanism failed for economic as well as political reasons (see below) and, with the explosion of world market prices the percentage depletion allowance became an unacceptable privilege. Although it was not completely abolished, it was reduced significantly.

Only at this stage did excess profit taxation become an issue in the United States and, after phasing out price controls, a windfall profit tax (WPT) was introduced by the end of the decade. Yet it was repealed as soon as the emergency was over, after the collapse of oil prices in 1986.

6.2 OPEC: The Uncompromising Landlord States

Until the mid-1950s, the United States produced more than 50 per cent of the world's total oil, and even today American oil companies remain of paramount importance in international oil. It was not surprising, then, that the US fiscal regime in oil became an obligatory reference all over the western world. What is more, given its conciliatory character, it was an attractive reference for the third world oil exporting countries who had granted important concessions in the first decades of this century when they were subject to conditions of colonial origin.

Regarding the fiscal regime, the issue that emerged was not only royalties but also income taxes. This form of taxation was becoming increasingly important, especially at the time of the Second World War. By the end of the 1940s US corporation income tax rate reached 37.7 per cent (in the case of oil producers after taking into account depletion allowance). Thus, the oil-exporting countries only had to ask for a 'fair' deal – the same deal that the US Federal government, as sovereign and natural resource owner, was applying to the oil companies on its lands. The first country to achieve this goal was Venezuela in 1943, then the biggest oil-exporting country in the world. The last one was Iran in 1954, which only got the same deal once the British monopoly in that country had been broken.

¹⁷ However, a first step was already taken earlier, in the late 1960s, when the percentage depletion allowance was reduced from 27.5 to 22 per cent.

This arrangement became famous as 'fifty-fifty profit sharing'. Indeed, the customary US royalty rates – one-sixth in Venezuela at wellhead but one-eighth f.o.b. elsewhere – plus the current American income tax rate worked out, accidentally but conveniently, to an even profit split. Not too bad! Yet this also meant that the most prolific and profitable oil fields in the world were paying the same ground-rent and income taxes as marginal fields in the USA. It was not surprising, therefore, that the oil-exporting countries soon asked for more. The US fiscal regime in oil, however, was meant to set a ceiling on taxes in the rest of the world, and the contracts were subject to international law and arbitration, even though taxation is generally conceived to be a sovereign state responsibility (Mommer 1983).

Amongst the third world oil-exporting countries there was at this stage only one really sovereign country, Venezuela. To put an end to fifty-fifty profit sharing all that country had to do was to increase its corporate income tax rate, and this is what it did in 1958. To achieve the same objective all the other exporting countries had to engage in protracted negotiations, which they did collectively once OPEC had been founded in 1960. Given this context it was not surprising that the issue of increasing ground-rent, or of any other change in the contracts, became inextricably linked to the quest of the third world for independence and sovereignty. The United Nations Resolution on 'Permanent Sovereignty over Natural Resources' took the matter up, most forcefully, in 1962 (UN 1962: Res.1803). Six years later followed OPEC's 'Declaratory Statement of Petroleum Policy in Member Countries' (OPEC 1968: Res. XVI.90). This statement defined a set of rules according to which the sovereign landlord states would be free to maximise their fiscal revenues, subject only to one restriction: the market. But the market was still a distant 'slack variable'.

OPEC scored some important successes in the 1960s. In spite of falling prices in the Persian Gulf, from an average of US\$ 1.80 per barrel at the beginning of the decade to US\$ 1.25 per barrel at the end, fiscal revenues per barrel in the old concessions increased from US\$ 80 to US\$ 85. Accordingly, the governments' take in the Gulf increased from 50 per cent to about 75 per cent. (In new upstream contracts, of course, conditions were even more favourable). Thus OPEC succeeded in hedging against falling prices by, so to speak, erecting a second fiscal floor to prices on top of the first floor defined by production costs. Moreover, albeit formally still within the framework of negotiation, OPEC had succeeded in breaking through the fiscal US-ceiling.

The fact is that not only was the global political and economic environment extremely favourable to OPEC but as it turned out, also geology. Three-quarters of the world's proven reserves were to be found in OPEC countries. Thus, once the market turned in its favour in the

early 1970s, the organisation succeeded in shaking off all limitations to its sovereign rights in the middle of the turmoil of the Arab–Israeli conflict and an Arab oil embargo. As a matter of fact, OPEC had contributed significantly to the upturn in the market by restricting investment opportunities in its territories during the 1960s. The international governance structure collapsed, and sovereign landlord states were now free to set volumes and prices, and to nationalise the industry.

It was the maximisation of ground-rent that led to nationalisation, the concessionaires or tenants being transformed into simple ‘operators’ or production services providing companies. As such they would be stripped of any ‘excessively high net earnings’ which OPEC had defined already in 1968 as

net profits after taxes which are significantly in excess, during any twelvemonth period, of the level of net earnings the reasonable expectation of which would have been sufficient to induce the operator to take the entrepreneurial risks necessary (OPEC 1968: Res. XVI.90).

To maintain high prices in the longer run, all that OPEC had to do, and did most effectively, was to restrict even more the flow of investment and, in the event, to fine-tune supply and demand according to shorter-term fluctuations. The international flow of investment was diverted towards other regions of the world where oil was comparatively scarce and production costs high. The highest-cost regions of the world did not, however, determine oil prices in a Ricardian sense; they were only in business because of restrictions imposed by OPEC on investment into more attractive lands.

6.3 The Liberal Response

The ‘OPEC revolution’ took the world by surprise. A cartel of landlord states was so strange a species that it could not possibly exist! Yet it did, and it caused a setback to the world economy important enough to be recorded in every economic history of the twentieth century. It also created a major confusion amongst experts and laypersons who were accustomed to understand the world of oil exclusively in terms of power politics, the international petroleum cartel, integration and competition.

Some consuming countries remained suspicious that the USA and the international oil companies were pulling the strings behind the scenes, but reality gradually overcame emotion and all consuming countries began to realise that in this confrontation the private oil companies were actually their allies. Nevertheless, it was not an easy alliance. Given the new level of oil prices, consuming *and* oil producing countries like the USA, Canada, or UK, had to engage in some kind of excess profit taxation. And even though these fiscal regimes

evolved into liberal ones, adjusting to lower prices, or even disappearing altogether as soon as a new equilibrium was reached, there were many ambiguities.

From the viewpoint of the oil companies, what happened was just that: tax increases. To oppose them was, is, and will remain, a matter of principle. The companies have always maintained that the fiscal regime in oil prevailing at the moment an investment decision was taken should not be modified to its disadvantage at a later date. Such modifications should only apply to new ventures. In developed countries this view did not question the sovereign right of the state regarding excess profit taxation but only its legitimacy. Thus, wherever these kinds of change have taken place, in spite of the lobbying of the industry, they have been, and are, denounced systematically and constantly. For example, the *Petroleum Economist* recently commented in its leader article dealing with the success of British North Sea oil production, that already by 1976 'the North Sea had proved to be an attractive and stable environment in which to operate', 'helped by favourable and consistent government policies' (*Petroleum Economist* 1998/05: 2). A few issues later, the same journal published a note of regret writing 'it was not correct to say that the UK provided an "attractive and stable environment" for oil ventures at that time. Petroleum revenue tax – a crude measure, with many negative aspects – was introduced in 1974, after heavy investments had been made...' (*Petroleum Economist* 1998/08: 7). Thus the legitimacy of PRT as applied to the older licences is still questioned, more than twenty years later, whereas the reason for its creation – the unexpected explosion of oil prices in 1973/4 – is simply ignored.

In the UK all that is left today of the times when the US fiscal regime was *the* reference, is the royalty of one-eighth in the licences granted prior to 1983. At this very time the government is considering the abolition of royalty altogether. Only PRT at 50 per cent will continue to exist, for the time being, but even PRT continues to apply only to licences granted prior to 1993. There can be no doubt that the generous liberal fiscal regime for the UK continental shelf (Rutledge and Wright 1998) has been of crucial importance to the success story of British North Sea oil (Martin 1997).

In North America, not surprisingly, the development was much slower. Downward sliding-scale royalties on public (federal) lands have been introduced only recently. But worldwide the trend outside OPEC and some other third world oil-exporting countries has been in the same direction, though with widely varying intensity, that is towards liberal

licensing and fiscal regimes, which allow investors to squeeze out every possible barrel from their lands (Barrows 1994).¹⁸

¹⁸ See also the monthly publication from Barrows: *Petroleum Legislation*.

7. OUTLOOK AND CONCLUSIONS

After the 'OPEC revolution' the Western World was divided into two areas, oil-consuming and oil-exporting countries. In the first there developed the extreme of a liberal fiscal regime showing little tolerance towards ground-rent. The second held to the other extreme, that of a proprietorial fiscal regime which basically reduced the role of oil-producing companies to production services providers. The first, there can be no doubt, has been successful, and it has made a perfect match for the development of a global economy. There can be no doubt either that the second has failed to deliver. Oil revenues did not cause the national economic and political development that was expected and promised. Nor were these countries, or OPEC, able to develop a new governance structure of oil that would be acceptable to the rest of the world. Uncompromisingly, oil prices were pushed to the upper limit of what the market could possibly bear – and far beyond.

Meanwhile the OECD countries, and most importantly the USA and the UK, were active in negotiating bilateral investment treaties in a move to counteract and to neutralise the third world majority in the United Nations with their sympathy for 'permanent sovereignty over natural resources'. Following the breakdown and disintegration of the Soviet Union, an oil exporter, Europe acted swiftly. The result was the European Energy Charter (1991) followed by the Energy Charter Treaty only three years later (1994) (Wälde 1996), a multilateral investment treaty designed to assist in the opening up to foreign investors of the vast reserves of oil and gas in the former Soviet Union. The rules that this Treaty tries to establish are more or less the exact opposite of those defined by OPEC Res. XVI.90. International law based on international arbitration, as defined by the Treaty, should apply to investors in oil and gas; not national law based on national courts. Furthermore, the Treaty moved into new and hitherto unexplored territory: private investors are entitled to summon the governments to appear in international courts. This part of the Treaty has already come into force.¹⁹

The new set of rules is directed towards freezing the conditions that natural resource owners may have negotiated at the very beginning, the time when the investors are in the strongest position. This however, is not so new after all, and in many ways takes us back to the 1920s:

¹⁹ Russia, the Newly Independent Republics, and almost all of the OECD countries signed the Treaty. Regarding the latter, the most important exception is the USA which believes that it is better off with its traditional policy of negotiating bilateral investment treaties.

It has been a deeply embedded principle for the companies to insist on complete exemption from taxation. The reasoning behind this principle was as follows: there is a basic difference between the operations of an oil company in the West and in ... an underdeveloped area. ... In as much as the native industrial undertakings are either of minor proportions or non-existent, it is clear that a foreign-owned oil company is likely to become the largest single industrial enterprise in a given country and that its profits ... will exceed the profits of any other enterprise in such country. Consequently submission to taxation would be tantamount to acceptance to possible discrimination, in as much as a legally enacted progressive tax system might in practice apply to one target only – a big foreign corporation (Lenczowski 1960: 70).

Any later attempt to increase taxation would amount to discriminatory taxation, the investors being then authorised to sue the governments or, even better, the national oil companies acting in this regard as hostages or umbrellas. Indeed, one typical feature of upstream contracts in recent years – be it joint ventures, PSAs or production services contracts – is the presence of a ‘stabilisation clause’. According to that clause the NOCs as partners or contracting parties fully assume the so-called ‘sovereign risk’. In other words, the landlord states may increase, sovereignly, taxation, but the whole increase will be paid for by their national oil companies, out of their own share, on behalf of the private investors.

What *is* new, however, is that an international treaty will now underpin this policy stance, and that it will apply, formally at least, to underdeveloped *and* developed countries. On the other hand, of course, investors in oil remain subject to general taxation, even in underdeveloped countries. The host countries' sovereignty is not questioned as long as it is not used to strengthen the state as a natural resource owner. Accordingly, a starting point has been defined from which only one trend can possibly emerge: the liberalisation of the existing fiscal regime. The opposite trend is outlawed. All this is very much in line with the development of globalisation and the weakening of territorial nation-states.

In practice, business was already ahead of these political negotiations. The new rules were applied earlier, for example in the Newly Independent Republics that are actual or potential oil-exporters. They were especially keen on foreign investment and, still suspicious of Russia, regarded it as a guarantee for their independence. Yet, and more surprisingly perhaps, in distant Venezuela things were going the same way (Mommer 1998).

In oil-exporting countries everybody is now aware of the paramount importance of oil in the context of fiscal revenues. However, people tend to overlook the fact that the oil industry is also the most important industry in its own right (as measured, for example, by

investment),²⁰ even where proprietorial fiscal regimes impose their limits. Hence, the oil industry, including the service and input providing industries, are potentially powerful allies in the process of liberalisation; of course, the worse the performance of the landlord states, the more this is true. When forced to open up precisely because of their poor performance, the liberalisation process inevitably includes a more liberal fiscal regime for oil.

The worldwide trend, then, is towards liberal fiscal regimes and, therefore, lower prices, notwithstanding those that see a coming supply crisis (Campbell 1997). Indeed, even if there is a tendency towards scarcity, this only means that the first floor to oil prices, production costs, may rise. But even now, the second floor, that of proprietorial fiscal regimes, is more significant, and this floor is subsiding and may compensate for increasing production costs. This is not only a question of arithmetic, but also of dynamics. Liberal fiscal regimes are likely to unleash the development of technology and production in new provinces of both conventional and non-conventional oil, which in itself may keep a lid on oil prices for decades to come.

However, a word of caution may be appropriate. What we are talking about is a trend in the international and national governance structures of oil, necessarily a slow and complex movement. Historical evidence on the landlord-tenant relationship suggests that this movement will not end with the complete disappearance of the landlord states. Some of them, or their equivalent at regional level, will survive even in the long run forming 'pockets'. But the trend is irreversible.

²⁰ For independent measures of the oil industry and the natural resource see Baptista and Mommer (1986), Baptista (1997a, 1997b), Mommer (1990), and Mommer (1996).

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